

days later it was slightly curarized, and the vago-sympathetic was divided on the side of the former operation. The cephalic portion being irritated, the usual effects were not observed; the buccal vaso-dilatation, as was expected, did not occur. The remarkable fact, however, was that of a very beautiful reddening of the opposite side. If the ganglion was extirpated on the right side, the dilatation occurred on the left. To show the route by which this effect was produced, it was sufficient to cut the vago-sympathetic of the left side also, and then renew the excitation, and the vaso-motor flush occurred on neither side. This, MM. Dastre and Morat claim as a new proof, that the dilatation is due to the sympathetic, since, they say, this being cut, the vaso-motor phenomena cease on the side operated upon, and the crossed or reflex action on the other side also ceases when the sympathetic is cut on that side also.

It still remains to be explained why the phenomenon, lacking in the uninjured animal, appears after ablation of the ganglion. In any case, this zigzag reflex is very significant in point of view of our knowledge of the reflex routes in the medulla and cord. MM. Dastre and Morat offer the fact with the immediate conclusion it justifies, reserving its complete interpretation and its consequences.

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THE TERMINAL DISTRIBUTION OF THE NERVES IN THE UTERINE MUCOUS MEMBRANE.—Prof. Schröder, of Berlin, furnished Dr. Patenko with the freshly excised uteri of five women, and the latter has utilized this material for studying the nervous termination in the mucous membrane. Dr. Patenko states that in all these cases the operation was undertaken for primary causes, but the malignant disease never extended above the os internum; and the microscopical and minute appearance of the uterine mucous membrane was always perfectly normal. He employed chloride of gold and osmic acid in solutions having a strength of 0.01 per cent. to 0.5 per cent. Portions of the specimens were subsequently placed in 96 per cent. alcohol, and used for thin sections. Other preparations were made by tearing small bits of tissue in the solutions mentioned. He makes a provisional statement of the results of his examinations. By suitable manipulations he succeeded in isolating some of the uterine glands, and a beautiful reticulum of delicate non-medullated nerve fibres was seen in connection with the *membrana propria*.

This network was situated above the external surface of the glands, and minute filaments were seen to proceed from it into the interior of the glands. These extremely delicate fibres were found between the endothelial cells of the membrana propria, or in the glandular epithelial cells. Their ultimate termination in the latter was not positively ascertained. The nodular points of the surface reticulum frequently showed small nerve cells. The author believes that this network takes its origin from the nerve fibres which course in the muscular substance of the uterus, and, accompanied by some intermuscular connective tissue, proceed to the boundary line of the mucous membrane. (*Centr. f. Gynäk.*, Sept. 11th. *N. Y. Med. Record*, Nov. 27, 1880.)

#### THE DETERMINATION OF THE POSITION OF OBJECTS IN SPACE.

—At the session of the Boston Society of Medical Sciences, Oct. 21, 1879 (reported in *Boston Med. and Surg. Journal*, Nov. 11th), Dr. H. P. Bowditch spoke briefly of some experiments which he had made bearing on the question as to the *relative degree of assistance which we get from our sense of touch and muscular sense, and from our sense of sight, in the determination of the position of objects in space.*

It would seem, at first glance, as if the delicacy of the visual sense were much greater than that of the tactile sense; yet, as a matter of fact, we constantly use the latter in connection with the so-called muscular sensibility to correct the former; thus in detecting the flaws in a piece of nice joiner's work.

Dr. Bowditch's own experiments were to study the point whether the use of the sight or of the muscular sense best fixes the exact position of an object in the memory. To this end he had brought a small glass bead into different positions on the table, at times with the eyes open, but without placing it with the hand; at times with the eyes closed, while the finger was used to place the bead, and had then tried under which of these two conditions he was best able to locate the bead subsequently with the end of a knitting-needle, the eyes of course being closed. The results were as follows:

Location by touch: minimal error, 8 mm.; maximal error, 38 mm.; average, 19 mm.

Location by sight: minimal error, 8 mm.; maximal error, 33 mm.; average, 11.4 mm.